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ment in the prevention and spread of disease, it must also enlighten government in the prevention of the spread and multiplication of worthless members of society, the spread of feeble-mindedness, of idiocy, and of all moral and intellectual as well as physical diseases.

I would not anticipate the findings of any of the four sections into which the work of the Congress is divided, but I would express my opinion that the monogamous family, *i.e.*, one husband, one wife, is to be maintained and safeguarded by the state as well as by religion as a natural and hence as a patriotic institution. In Doctor Lowie's very able recent work, "Primitive Society," it is shown that in general the family is safeguarded; that the natural instinct so widely prevalent among all social lower orders of animals to preserve the family at all costs dominates the elementary morals of primitive races. It is not an exaggeration to say that many tendencies in recent social development, as distinguished from racial evolution, are against this natural mandate regarding the family. The wisdom of British biologists, expressed by Tennyson in his memorable lines:

So careful of the type . . .
So careless of the single life,

has been transmuted into the fatal reverse

So careful of the single life . . .
So careless of the type.

The closing decades of the nineteenth century and the opening decades of the twentieth have witnessed what may be called a rampant individualism—not only in art and literature, but in all our social institutions—an individualism which threatens the very existence of the family; this is the motto of individualism: let us obey our own impulses, let us create our own standards, let each individual enjoy his own rights and privileges—for tomorrow the race dies. In New England a century has witnessed the passage of a many-child family to a one-child family. The purest New England stock is not holding its own. The next stage is the no-child marriage and the extinction of the stock which laid the

foundations of the republican institutions of this country.

It is questions of this kind which are being set forth before this Congress so that they may be disseminated among our people. Let us endeavor to discard all prejudices and to courageously face the facts. Recent works by Bury and Inge on human progress are regarded in some quarters as pessimistic. I do not regard them as pessimistic, because to my mind the pessimist is one who will not face the facts, and these writers, especially Inge, look at the worst as well as at the best. I regard an optimist as one who faces the facts but is never discouraged by them. The optimist in science is one who delves afresh into nature to restore disordered and shattered society. This was the constructive spirit of Francis Galton, founder of the science of eugenics. I trust it will be the keynote of this Congress. To know the worst as well as the best in heredity; to preserve and to select the best—these are the most essential forces in the future evolution of human society.

HENRY FAIRFIELD OSBORN

THE AIMS AND METHODS OF EUGENICAL SOCIETIES

INTERNATIONAL CONGRESSES are organized no doubt mainly with the object of enabling workers in the same field both to become personally acquainted with each other—a far-reaching benefit—and to exchange information and ideas. We who have just crossed the Atlantic have come to a land in which many notable institutions have long been engaged in the study of biology and genetics, these being the pure sciences on which the applied science of eugenics is based, and where human racial problems have also long been keenly investigated. So much has been done in all these directions here that when I was honored with an invitation to address you I felt great difficulty in selecting a subject which I could discuss with any reasonable prospect of promoting our common aim, namely the improvement of the racial qualities of future generations. It is, however, not only scientific information

which we can now profitably exchange one with another, but also our actual experiences; and, as I have been for ten years president of a British society for the promotion of eugenics, it occurred to me that it might interest you to hear something about our aims, our methods and our difficulties. I look forward to the time when eugenical societies will exist in all populous centers, their work being to strive to build up a social superstructure on the scientific foundations laid by central organizations engaged in biological and eugenical research. Whilst these much needed societies are passing through the period of their adolescence, we may be sure that they will not be without their growing pains and their difficulties; and these difficulties will certainly be more easily overcome if clearly realized in advance. I hope, therefore, that existing societies will not scruple to air their troubles in public!

When an association is being created with any social object in view, a demand is likely to be made for a clear and rigid definition of the policy which is to be promoted by it; and from such demands may arise not only the first juvenile ailments of eugenical societies, but also occasional internal inflammations later in life. Now I was recently asked to state once again in broad and general terms what are the aims of my society, such a statement being needed not so much for our own information as to enable us to make our position more clear to the general public. The main difficulty in replying to this request lay in the fact that experience has taught us that attempts to decide in detail exactly what may be advocated and what should be condemned by eugenists are more likely to do harm than good by unduly restricting eugenic activities. A choice has always to be made between a smaller society with narrower aims and a larger society tolerating wider divergences of opinion; and although both plans have their advantages, yet in a young and growing subject like eugenics care should be taken not to injuriously hamper future liberty of action by too rigid definitions of policy. What seemed to me to be needed was a eugenic sign post, with arms pointing, not to every by-path, but to the various main

roads along which our society should strive to advance; and the conclusions I then reached I now repeat in the hope that they may prove to be of some interest to a wider circle of friends.

The first words which I uttered as the president of my society ten years ago were that heredity should be its guiding star, and in that opinion I have never faltered. A good deal of progress has been made since that date, and now the man who calls himself well educated is as a rule beginning to have some dim idea that all human beings are the product of two factors, heredity and environment, and that consequently to both of them some attention should be paid. Now if a eugenical society accepts only one of these factors, namely heredity, as the foundation on which all its operations ought to be built, its members should as individuals most clearly emphasize the fact that all those who are striving to improve human surroundings have their warm sympathy. Of course eugenists cannot approve of such measures as would injure mankind as a whole, the future as well as the present being taken into account; but, putting that possibility aside, we personally should give our blessing to many reforms which eugenical societies do not help to promote. We see as clearly as anyone that to take steps tending to produce in the future a race with the best possible natural qualities would be a futile proceeding unless we hoped that when such a race did appear great care would be taken to give to it good surroundings. If eugenical societies confine their attention exclusively to heredity, it is only because so many other societies think only of environment.

It is true that sometimes it may be necessary to indicate that the high hopes entertained by reformers of to-day are not justified by past experiences. It may be said with only a microscopic divergence from the truth that all reforms since civilization began have been based on attempts to improve human surroundings; and we may ask those who found their hopes for the future only on changes being made in environment to consider how much has thus been accomplished since history began. As to our highest moral ideals, is it not true that for

the most part they have been promulgated in certain eastern countries ever since the dawn of civilization? How do we compare in intellect with the inhabitants of ancient Greece two thousand years ago? With a knowledge of the delights of country life, can we look on our slums with anything but shame? Do we not blush to talk of peace on earth and goodwill towards men whilst remembering what has happened during the last seven years? And, in view of all this, have we any right to assume that improvement of environment will do more for mankind during the next two thousand years than it has done since the days of Plato? Reformers who look only to surroundings should consider well the foundations on which their projects are based before pointing the finger of scorn at the believers in heredity. Eugenics has been called a dismal science, but it should rather be described as an untried policy. Eugenics indicates a new method of striving for human welfare which, if combined with an equal striving for improvements in human surroundings, more truly justifies a hopeful outlook than anything which has yet been tried in the whole history of the world. More hopeful, that is, if the roads to which our eugenic finger post is pointing are not as studiously avoided in the future as they have been in the past.

The eugenic signpost which we wish to erect should, in my opinion, have three arms on it, pointing to three main lines along which an advance should be pressed forward. In the first place the public should be made to realize more and more fully what a potent influence heredity has on the fate of all nations. In the second place efforts must be made to ascertain and to make known the rules by which each individual ought to strive to regulate his own conduct in regard to parenthood in accordance with the laws of heredity in so far as they are now surely known. Lastly, the action which the state should take in order to stimulate and to enforce conduct productive of racial progress must be considered, a line of advance to be advocated, however, with great circumspection when compulsion is concerned. Our aim must

be to advance along all these three roads simultaneously and continuously.

The laws of natural inheritance supply a means of predicting in a measure the qualities of offspring when the qualities of their parents are known; and if any society accepts heredity, not as its sole guide, but as a light ever to be held in view, it is in fact intending to rely to some extent on these laws of natural inheritance when attempting to forecast the results in the future of our actions of to-day. Genetics is the pure science which deals with heredity, and genetics is, therefore, the very foundation on which the superstructure of eugenics is being built. The students of genetics will, however, I am sure, all agree that a vast amount of research is needed before they will be able to rest satisfied with the knowledge they have acquired, supposing it to be possible that such a state of contentment will ever be reached. Now it is impossible to conduct the needed breeding experiments on human beings, and genetic research must be largely concerned with the lower animals and with plants; whilst eugenics is primarily concerned with man alone. Then again eugenics must include the study of many social and economic problems which lie quite outside the sphere of genetics. The pure science of genetics and the applied science of eugenics do, therefore, cover different fields, though the boundary between them is ill defined and movable; and in both fields further advances are urgently needed. For these reasons it seems to me—though here opinions may differ somewhat—that the main aim of eugenical societies should now be, whilst leaving geneticists to cultivate their own ground, to formulate a sound eugenic policy based on existing genetic knowledge, and then to promote the translation of every advance in eugenic theory into general practise. If we eugenicists rely on scientific experts for the laying of our scientific foundations, then we shall be able to devote our main energies to the advocacy of reforms tending to promote racial progress and to considering how wide may be the area over

which such reforms can be justifiably extended.

With regard to much of the research work which is so urgently needed, most eugenical societies will indeed have no option but to leave it to others or to leave it undone; because in many lines of enquiry a well equipped laboratory and a highly skilled staff are essential for success. Certain investigations, which need no special apparatus, however, could be carried on anywhere. Moreover, the scientific material as received from geneticists often needs to be thoroughly discussed by eugenists in a scientific spirit before being applied to human affairs; and we must not rely wholly on genetic research for the supply of scientific material on which to build. Wealthy patriots in all countries will doubtless from time to time perceive that by their wealth they might help to promote the acquirement of that knowledge on which racial progress must depend in the future. A strong central society might in such cases play a useful part in suggesting various directions in which, with their aid, advances of great value could at once be made; as well as being ready, if so desired, to act as agents by whom the investigator would be selected and employed, care being taken not to hamper him with undue control. The more liberal the benefaction the more fundamental and far-reaching might be the researches thus undertaken, and the greater the ultimate benefit to mankind. Your endowments in America are so magnificent that you may not fully perceive how much they are needed elsewhere.

As to the first of the suggested lines of advance, namely, as to getting into direct and immediate touch with the public with the hope of spreading abroad a general knowledge of the laws of natural inheritance, this knowledge should form the basis of all the arguments brought forward at public lectures on eugenics, that is, at lectures not forming part of any extensive series. It is indeed in laying this foundation of scientific truth that speakers on such occasions encounter their greatest difficulties; for many prejudices arising

from ignorance have to be overcome. For example, those who do not acknowledge to themselves that men differ greatly from each other in their inborn qualities, cannot be made to realize the extreme importance of paying attention to heredity in regard to social questions; and the acknowledgment that we do not start even in the race of life will be hindered by a disinclination which we all feel both to regard any human disabilities as being incurable and to own that other individuals may be greatly superior to ourselves. As to the facts on which the scientific theories of heredity are based, it is worse than useless to attempt to give them in detail at single lectures; for lecturers should remember that on such occasions they cannot hope to do more than leave an enduring *general* impression on the minds of their audiences. Except in systematic courses of study, much must always be both stated and accepted on authority; for to fully justify all the beliefs of eugenists would require months rather than days. "It is hardly possible," so my father declared, "within a moderate compass to impress on the minds of those who have not attended to the subject, the full conviction of the force of inheritance which is slowly acquired by rearing animals, by studying the many treatises which have been published on the various domestic animals, and by conversing with breeders."¹ If this be so, the public can only learn how to give to natural inheritance its proper value by acquiring information at second hand; and yet to make any statement acceptable to audiences, it must be in some degree endorsed by their own reasoning powers. It is on this account that allusion to the breeding of domestic animals becomes almost a necessity in public lectures on eugenics, for the wisdom of attending to breed in the case of cattle and dogs is universally admitted. Great care should, however, always be taken to indicate that, though our experiences in the stockyard enable us better to understand the laws of natural inheritance, yet our reliance on these

¹ "Animals and Plants under Domestication," Darwin I., pp. 447-448.

laws carries with it no implication whatever that the methods of the animal breeder ought to be introduced into human society. It should in fact be most strongly emphasized that nothing which we advocate is contrary to the highest religious ideals. This is, however, rather a digression; for I am not here to instruct lecturers how to lecture. All that I now wish to insist on is that, by means of lectures to audiences of all kinds, the endeavor to spread abroad sound impressions concerning the force of natural heredity and the enormously important influence which it has in deciding the welfare and the destiny of nations should form a prominent part of the programme of all eugenical societies.

The title selected for the British Society by its founders was the *Eugenics Education Society*, and certainly they had excellent reasons for thus emphasizing the educational aspects of the eugenic campaign which they were inaugurating in my country. No class of the community is more important to interest in racial problems than teachers of all grades; because the ideas of the youth of to-morrow will depend so largely on the opinions of the teachers of to-day. But teachers must be taught before they can take a thoroughly intelligent interest in racial questions; and for this reason it is of primary importance that biology should be given adequate recognition in the curricula of all colleges where teachers are trained. Our educational aspirations could not, however, be completely satisfied in this way; for to finally succeed in the first of our main aims, namely, the spreading abroad of a general knowledge of the laws of natural inheritance, natural science must be given a far more prominent place than at present in the courses of studies of all schools and colleges. No doubt there are many who now regard our efforts with great distrust; but those who feel thus should remember that the better and the more widespread the teaching of biology, the more certain would it be that any eugenic errors would be detected and their harmful influence prevented. Moreover, if we want progress in scientific research to be both rapid

and on right lines, it is important that a considerable number of students should be thoroughly trained each year in genetics, or that more undergraduates should specialize in natural science at our universities than at present. Eugenics has a long struggle before it, and all these methods of laying educational foundations for future progress should certainly come within the scope of the efforts of eugenical societies.

Passing on to the second of the main lines along which eugenical societies should strive to advance, what we want to know is the rules which ought to guide each individual in deciding on his own voluntary actions in all matters relating to racial progress. The attempt to ascertain the precepts by means of which each one of us should strive to regulate his conduct in questions connected with parenthood obviously involves the consideration of a number of ethical, racial and economic factors; for, in regard to any proposed line of conduct, we have to weigh in the balance as well as we can its moral effects, the immediate material advantages or disadvantages to the family and to the state which are likely thus to arise, and the benefits or injuries which it will confer or inflict on the race in the future. Even if these problems be approached in a calm and scientific spirit—and in this respect eugenical societies should strive to set a much needed example—even then it will be exceedingly difficult in most cases now to arrive at precise conclusions. We must not attempt in the present state of our knowledge to lay down rigid rules of conduct, but only to suggest general guiding principles; though we may hope that with every advance of science it will be possible more and more clearly to indicate what each individual ought to do and what he ought to avoid. As an illustration of the difficulties involved in these problems, consider the case of a contemplated marriage when both families thus to be connected are characterized by some degree of ill health. Now it would only be persons endowed with high moral qualities who would be likely to obey any self-denying ordinance in regard to mar-

riage and whose fertility would, therefore, thus be diminished. Might we not, by condemning marriage in such cases, tend to breed out the most valuable of all human attributes, namely, the desire to do right? Again if insanity were the family trouble in question, this being one of the most grievous of all human ailments, we now know that it is sometimes the result of disease and probably in such cases not heritable, whilst other types certainly do run in families. What are we to do in the face of such doubts and difficulties as these? Are we to admit our incapacity to meet the situation? Certainly not, for the history of scientific research clearly proves that what to-day appears like an impenetrable barrier to further progress will probably tomorrow be regarded rather as a useful stepping stone for a further advance. Doubtless we have difficulties ahead of us, which must be faced with patience; but we should take note of these obstacles in our path mainly as emphasizing the need for societies where such guiding rules for voluntary conduct in relation to parenthood as are warranted by existing knowledge and by present needs will be wisely and temperately discussed.

A comparatively new subject like eugenics is apt to arouse prejudices and to give opportunities for misapprehension; and it sometimes seems that what is now most needed on the part of eugenical societies in regard to voluntary actions is that they should make clear what they are *not* recommending. We have been accused of wishing to abolish love altogether as a guide to conduct; but this is false. What we desire is rather to purify love, or to clear away all those harmful influences which so often attach themselves to it. Certain American investigations indicate that the ideals which naturally dwell in the minds of young people in regard to the qualities of the mates to whom they would wish to be connected in marriage are on the whole fairly sound, and that these promptings if followed would generally lead to unions beneficial to the race. But the desire for wealth, the wish to rise in the social scale, and, some would add, too great attention to personal appearances, often make

the choice of a mate far worse than it would have been if these natural ideals had been given full sway. In passing I must, however, put in a racial plea for good looks on the ground that they are apt to be associated with good health; a plea which I hope does not spring from a mere masculine weakness on my part. Be that as it may, love is doubtless to a large extent aroused by advantageous moral and mental qualities; and, in so far as that is the case, it forms the firmest foundation on which to base a eugenic policy. Much can be done to help to lay this foundation by promoting suitable opportunities for the meeting of young men and maidens; by judiciously encouraging intercourse between our children and worthy friends of the other sex, from amongst whom worthy mates are not unlikely to be selected; by stimulating a pride of family in so far as dependent on character and performance; and, above all, by fostering the growth of all that is noble in the ideals of the adolescent. Never make a close friend of a person one can not respect is, I believe, not only a helpful rule of life, but also a useful way of setting an example to the rising generation. But here a possible racial danger must be noted; for an injudicious pursuit of the policy here suggested might make the high-minded become too particular and therefore less likely to marry than their more ordinary companions, with obvious dysgenic consequences. Pure love between the sexes should be proclaimed as the noblest thing on earth, and the bearing and rearing of children as amongst the highest of all human duties. Some risks ought to be run in order to secure these joys and to fulfil these duties; and Cupid may well remain a little blind to all minor defects. To promote these ways of regarding sexual problems and to show how often the moralist unknown to himself is in effect striving to better the racial qualities of future generations come well within the scope of our endeavors.

Though we have seen that as knowledge increases so the difficulties of deciding on rules of personal conduct will diminish, yet it is certain that these difficulties will ever remain very

formidable. We may now boldly assert that when the heritable defects of many members of a family are very serious, those belonging to it should not become parents; but how serious must these defects be before being regarded as a bar to parenthood? It will never be possible to draw as sharp a line of demarcation as that between sheep and goats when marking off from the general population those in whom parenthood would be a moral offense. Because of this impossibility, it may come to be held that the size of the family should vary with the innate qualities of the parents; but how is this relationship between fertility and transmissible characteristics to be determined? Then, again, many who take no thought concerning racial questions now hold strongly that it is wrong to bring a child into the world without a reasonable prospect of its being able to live a life up to a certain standard of civilization. But what should be the standard adopted? In large numbers of cases the cause which has prevented the winning of a "standard" livelihood, however we may define that term, has been some inborn defect, or defect which would in a measure be passed on to the next generation. Teach those not living up to standard to regulate their conduct with due regard to the welfare of any children who may or may not be born in the future, and many would limit their families on this account; with the results that these harmful innate defects would appear less frequently in future generations. Is it not, therefore, of great importance that some attempt should be made to ascertain what standard of living does justify parenthood? Again it is even more important that it should be widely felt that it is morally wrong to limit unduly the size of the family when parents are up to "standard" in all respects; for it is essential for the welfare of mankind that the seed of this good stock should not be lost to posterity. Eugenical societies should, in my opinion, steadily keep in view the necessity of trying to solve all these intensely difficult problems; problems which need the joint consideration of the eugenicist, the geneticist, and the economist for their solution. But as for our advice of to-day concerning personal conduct

in regard to procreation, we can say little more than that moral principles must always be kept in the foreground, and that, for the rest, trust must be placed in common sense and a wise doctor.²

To whatever extent success may attend our efforts to lay down rules for personal conduct in regard to parenthood, to that extent we shall have succeeded in deciding on the directions in which we wish to advance in these matters. Such decisions will, however, prove to be but a very uncertain indication of the extent to which the state should endeavor to promote or to enforce obedience to these rules; this being the subject to which we must now turn our attention. By promoting uniformity of conditions and by checking individual initiative, the state often retards progress; and, besides affecting those intended to be affected, governmental action nearly always produces on other persons various consequences which were unforeseen and which are never fully realized. Whatever may be our political opinions, we nearly all of us agree that these are dangers which must be taken into account when contemplating state control over the individual. These are, however, large issues which some will regard as lying outside the proper scope of eugenic considerations; whilst the point which I especially wish to emphasize in this connection is one definitely related to the actions of eugenical societies. In my opinion our societies ought to be ready to encourage *discussion* on all proposals for relevant reforms, whilst they should be cautious in the present state of our knowledge in actually recommending *governmental interference*. If discussion be not bold, progress will be slow; for a nation can not grope its way quickly to the front in the darkness of ignorance. If action be too bold, progress will also be slow; for the wrong road will often be taken. In matters of conduct we should balance the *probability* of good or evil arising from the action proposed to be taken, as against the *magnitude* of the good or evil if it does arise. The smaller the chances of failure, the smaller may be the benefits hoped to be

² I assume that the doctor has studied genetics, which is unfortunately not always the case.

attained. The probability of harm resulting from the mere discussion of any reform would usually be very small, even if that reform would be very harmful if adopted. On the other hand, the possibility of benefits arising from the discussion of reform is almost equally obvious whether the proposed legislation would in fact be beneficial or harmful. To take a single example, there are strong differences of opinion as regards sterilization; but all may hold that by open discussion true conclusions would most likely be reached. The advocates of sterilization of course wish to have this subject brought to the notice of the public; whilst its opponents must admit that they will be more likely to promote than to retard its introduction by, as it were, burying their heads in the sand like the ostrich and by refusing to favor the creation of opportunities for openly stating their objections to it. It is indeed nearly true to say that every subject may be openly discussed with advantage *provided the occasion be properly chosen*; and it is in this spirit that eugenical societies should, in my opinion, conduct their proceedings.

In all human affairs we are constantly being compelled to take opposing considerations into account and to adopt compromises, and I think that I ought not to be accused of inconsistency if I now turn round and show why eugenical societies ought not to be too timid in regard to legislation. As to your middle-aged Anglo-Saxon, and I am only speaking for my own country, there is hardly anything which he dislikes so much as having to change his opinions; and from this weakness men of science are by no means exempt! Here is a barrier which will stop any half hearted advance on the part of eugenic reformers! To the students of natural sciences, at all events, we can suggest that Nature's plan seems to have been to stamp out of existence all organisms which fail to fill the places she assigns to them, and this without regard to the sufferings thus caused or to the superiority in many respects of large numbers of the individuals thus eliminated. By adopting rational methods in human affairs, much can be done and much ought to be done to prevent human beings from being enforced

to sufferings similar to those which animals in the wild have to endure because of that struggle for existence to which they must submit; but nevertheless we should not be quite blind to the example set us by Nature in her readiness to sacrifice the individual for the sake of the race. Unfortunately it will be our politicians who will mainly settle how far the teachings of science shall be made to affect legislation; and this they will be apt to do with little reference to the opinions of experts and largely in the hope of catching votes. But the votes of future generations can not now be caught, and their interests will, therefore, be likely to receive but scant attention in all democratic countries. Governments which depend on the suffrages of the people are of necessity always somewhat timid in regard to unpopular reforms; and until eugenics becomes popular—when will that be, I wonder!—there is not the slightest chance of eugenic reform moving forward with too rapid strides. Eugenists must lead the advance in racial questions, and our societies must remember that nothing is more fatal to leadership than a show of timidity. We should discuss long and freely, and when we do advance, advance boldly.

Legislative reforms can seldom be effectively promoted or steadfastly maintained unless they are sanctioned by the general opinion of the citizens concerned; and, on somewhat similar grounds, eugenical societies would be wise to avoid taking corporate action in regard to legislation unless the proposal in question has the nearly unanimous approval of their members. The neglect of such warnings has led to the disappearance of governments and to the disruption of societies! When legislation does not involve compulsory interference with the liberty of the individual, there is comparatively little danger of internal friction being caused by its advocacy; for unanimity in such circumstances is both more probable and less necessary than when compulsion is involved. As examples of legislation of general application producing beneficial racial effects, certain reforms in regard to taxation might be mentioned. My

Society took an active part in the agitation in favor of such alterations in the assessment of income tax as would make the burden of taxation fall less heavily on parents of families and more heavily on bachelors and the childless *in the same stratum of society*, the object being to increase the birth rate of a useful class of the community. As to legislation involving interference with individual liberty, here also unanimous support can be obtained if the racial advantages are sufficiently obvious. For example, there was no dissension whatever in my society when we moved in favor of the Mental Deficiency Bill, a bill which authorized the segregation of the feeble in mind, that is to say, their detention in comfort under carefully safeguarded conditions. But until unanimity in the ranks of a eugenical society in regard to such compulsory measures is obtainable, their discussion only is to be recommended. Personally I should like to see practical steps at once taken for lessening the fertility of habitual criminals, of hopeless wastrels, and of the grossly unfit generally, and others doubtless wish to advance in other directions; but we must have patience. My object for the moment is not, however, to attempt to survey all the roads by which advances may be made in future, but rather to consider what should be the broad principles of strategy which should guide eugenical societies in the long fight before them in their attempts to promote racial progress.

Thus I have dealt with the *objects* which eugenical societies should strive to attain rather than with the *methods* of attaining the ends desired, the reason being that I have little novel to suggest in regard to methods. With the view to the advancement of scientific knowledge and the elucidation of eugenic problems, my society holds periodical meetings at which addresses are delivered or questions debated. In our *Review* these addresses are often published, and we there also try to give impartial accounts of current eugenic literature. We maintain a library, and give advice to readers. We keep in touch with foreign societies, and it has been an especial pleasure to us to give all the assistance in our power to the

American committee which has so admirably organized this Congress. As to activities definitely undertaken for the purposes of propaganda, the following may be mentioned: the delivery of lectures to audiences of various types, including social clubs, debating societies, educational conferences, summer schools for teachers, and, during war times, soldiers in camp and barracks; the organization of summer schools dealing largely with eugenics; the sending of deputations to government departments; and of letters to the press. To take one example in detail, after a thorough enquiry concerning the incidence of our income tax, a letter was written to all members of Parliament, and at a later stage amendments to the Finance Act were proposed by members at our suggestion, and were rejected! The next step, a direct result of this agitation, was the appointment by the government of a royal commission on the income tax before which I gave evidence on behalf of my society. Several of the recommendations of that commission, representing a step forward in the direction desired, were subsequently adopted and became law. Thus by steady persistence on well thought out lines a society may be able to produce material effects in many directions. As a last word about the doings of my own society, I must be allowed to mention a dinner followed by an address, held on February 16 in each year. In this way we yearly remind ourselves on the birthday of Sir Francis Galton that to him we owe the opening of the eugenics campaign in England.

What I have tried to do in my address today has been to give some indication of the difficulties likely to be encountered by youthful eugenical societies; difficulties which, we have seen, may come from many quarters and in many shapes. Questions connected with both sex and personal liberty have to be dealt with by eugenists, and these are topics especially liable to give rise to strong feelings. Even when the opposition thus aroused is quite unreasonable, we should, however, always remember that the sentiments underlying this opposition are often in many respects highly commendable, and that to openly

acknowledge where others are in the right is often the best way of getting a hearing for ourselves. The most formidable foe we have to meet is ignorance; and here again it is wise to admit that the ignorance is not all on one side. With every growth in our knowledge of biology and sociology we shall be able safely to enlarge our programme, and we should make it clear that our discussions of to-day are often tentative and do not always indicate the directions in which we shall advance to-morrow. As to the ignorance of our opponents, it can only be overcome by patience, perseverance and above all by never concealing such doubts as are still felt. Unfortunately it must be admitted that even perfect knowledge, however widely held, would not make our path quite smooth, human nature being what it is; for the want of attractiveness of our programme is largely due to the fact that we are looking to human welfare in the more or less distant future and not to present-day comforts. Most men in their march through life are hoping either for personal distinction as a reward for their exertions or for quick returns on their investments; and neither of these benefits is to be obtained in the eugenic market. You can easily enough get your forests cut down and the timber sold for an immediate profit; but the planting of slow growing trees, which will not be worth felling till most of us are dead, is a less attractive venture, though more beneficial to the nation. The reforms which the eugenicist wishes to plant would certainly bear excellent fruit in due course, even though much of it would only be gathered by our children and our children's children. Then again your business men not seldom try to sell their goods by running down the wares produced by their rivals, an inexcusable proceeding in so far as merely an outcome of greed and jealousy. Now this same competitive spirit is far too much felt in social work, and I fear we eugenicists have often aroused opposition by unnecessarily running down reforms dependent on changes in environment. Let us rather strive to show that there is plenty of open ground over which reformers of all kinds can

strive to advance simultaneously and harmoniously; and let us all recognize that jealousy is one of the commonest and probably the most insidious of all human failings. The claims of this generation and of posterity are doubtless sometimes antagonistic, and the genuine difficulties thus arising must be openly faced and often met in a spirit of wise compromise. The main obstacles to be overcome by eugenicists are, however, dependent on moral failings, and what we have to show is that we are engaged in a moral campaign, with human welfare in the highest sense as the goal for which we are striving.

Eugenics aims at increasing the rate of multiplication of stocks above the average in heritable qualities, and at decreasing that rate in the case of stocks below the average. But if the banner under which we are to fight should only have inscribed on it some such arid definition of policy as this, our defeat would be certain. We must prove that we are under the guidance of a noble ideal. We of this generation are responsible for the production of the next generation and, therefore, of all mankind in the future; and all in whom this sense of racial responsibility acts as a deep-seated sentiment, greatly affecting their action and their policy, are in truth guided by the eugenic ideal. The belief that man has been slowly developed from some ape-like progenitor came towards the close of the last century to be nearly universally held by thoughtful persons; this belief gave rise to a new hope that this upward march of mankind might be continued in the future; and out of this new hope sprang the eugenic ideal. This growing understanding of the past history of the world has led us to see that, if we are to imitate Nature in her methods, we must be content to advance by means of a long succession of small steps; just as rain falling in drops on the earth has slowly carved out mighty valleys in the hardest rocks. Without constructing wild Utopias, we must be content if some little racial progress can be ensured as each generation succeeds another; for to work in this spirit is to work in harmony with the knowledge which gave birth to the eugenic ideal. Progress on eugenic lines will

make mankind become continually nobler, happier, and healthier; whilst those who imagine that our sole aim is to make man a stronger animal or a better beast of burden are utterly ignorant of the meaning of the eugenic ideal. But science, whilst giving us good grounds for hope, also issues a grave warning concerning the danger of national deterioration resulting from the unchecked multiplication of inferior types. In the past many nations of the first rank, when apparently advancing without check on the path of prosperity, have begun to decay from unseen causes, and have in time so fallen from their high estate as to cease to count as factors making for progress. A determination that such a downfall shall not be the fate of his nation is a sentiment felt by every man who is animated by the eugenic ideal, an ideal to be followed like a flag in battle without thought of personal gain.

LEONARD DARWIN

FREDERICK MORTON CHAMBERLAIN

FREDERICK MORTON CHAMBERLAIN died on August 17, 1921, in a hospital in Oakland, California, after a long and sometimes hopeful fight against tuberculosis. He became seriously ill in July, 1913, while on the Pribilof Islands, and although he partially regained his health for short periods, he was at no time thereafter able to resume his usual activity. The U. S. Bureau of Fisheries has thus lost one of its most faithful employees, one whose clear, keen mind and charming personality will long be mourned by his associates.

Mr. Chamberlain was born in Indiana, June 29, 1867. He graduated at the State Normal School at Terre Haute in 1894, the State University at Bloomington in 1896 and the George Washington School of Law in Washington, D. C., in 1913. A close friendship began at the Indiana colleges with (then) Professor Barton Warren Evermann with whom later he was associated in many scientific investigations.

In the fall of 1896 he followed Dr. Evermann to the U. S. Bureau of Fisheries (then the United States Fish Commission) with which he was connected throughout the re-

mainder of his active career. In 1897 he and Dr. Evermann carried on fishery investigations in some of the southern states. Later in the same year he joined the Fisheries Steamer *Albatross* and accompanied her to Alaskan waters for a season of work in the fisheries. The two following years the investigation of salmon in the streams of California occupied his attention. In this he was associated with Cloudsley Rutter. In 1900 and 1901 he was back on the *Albatross* engaged on Alaska fishery problems, and in 1902 he worked in Hawaii.

During the summers of 1903, 1904 and 1905, a work on the life history and young stages of Alaskan salmon was completed. The report which was published in the Report of the Commissioner of Fisheries for 1906, marks the beginning of an epoch in the study of these important food fishes, and its importance has only lately come to be realized in fish-culture. The clear, concise language shows the hand of the master workman, and the thoroughness with which each problem was attacked is the chief mark of the true scientist. His health failed in 1905, while he was in the field on these investigations, but apparent full recovery was made after a short stay in Arizona.

The *Albatross* sailed on a winter cruise to the south Pacific for Alexander Agassiz during the winter of 1904 and 1905 and Mr. Chamberlain accompanied the vessel as naturalist. The summer of 1906 was spent with the ship in north Pacific and Japanese waters, while from 1907 to 1910 he was in the Philippines. The last cruise closed his connection with this famous vessel. During her most active period Mr. Chamberlain was aboard and attended to the preparation of a great many thousand specimens of marine animals for later examination of specialists. The impersonal manner in which the records of the *Albatross* must necessarily be kept is regrettable. Thus some pieces of iron, fastened together in the form of a ship and named after a bird will live for centuries in the annals of science but the guiding hand which caused the machinery to produce the treasures of the deep, passes to oblivion, unmourned except by his